

GLU PRO LEU ASP ASP TYR VAL ASN THR GLN GLY ALA SER LEU PHE
 1 5 10 15
 SER VAL THR LYS LYS GLN LEU GLY ALA GLY SER ILE GLU GLU CYS
 20 25 30
 ALA ALA LYS CYS GLU GLU ASP GLU GLU PHE THR CYS ARG ALA PHE
 35 40 45
 GLN TYR HIS SER LYS GLU GLN GLN CYS VAL ILE MET ALA GLU ASN
 50 55 60
 ARG LYS SER SER ILE ILE ILE ARG MET ARG ASP VAL VAL LEU PHE
 65 70 75
 GLU LYS LYS VAL TYR LEU SER GLU CYS LYS THR GLY ASN GLY LYS
 80 85 90
 ASN TYR ARG GLY THR MET SER LYS THR LYS ASN GLY ILE THR CYS
 95 100 105
 GLN LYS TRP SER SER THR SER PRO HIS ARG PRO ARG PHE SER PRO
 110 115 120
 ALA THR HIS PRO SER GLU GLY LEU GLU GLU ASN TYR CYS ARG ASN
 125 130 135
 PRO ASP ASN ASP PRO GLN GLY PRO TRP CYS TYR THR THR ASP PRO
 140 145 150
 GLU LYS ARG TYR ASP TYR CYS ASP ILE LEU GLU CYS GLU GLU GLU
 155 160 165
 CYS MET HIS CYS SER GLY GLU ASN TYR ASP GLY LYS ILE SER LYS
 170 175 180
 THR MET SER GLY LEU GLU CYS GLN ALA TRP ASP SER GLN SER PRO
 185 190 195
 HIS ALA HIS GLY TYR ILE PRO SER LYS PHE PRO ASN LYS ASN LEU
 200 205 210
 LYS LYS ASN TYR CYS ARG ASN PRO ASP ARG GLU LEU ARG PRO TRP
 215 220 225
 CYS PHE THR THR ASP PRO ASN LYS ARG TRP GLU LEU CYS ASP ILE
 230 235 240
 PRO ARG CYS THR THR PRO PRO PRO SER SER GLY PRO THR TYR GLN
 245 250 255
 CYS LEU LYS GLY THR GLY GLU ASN TYR ARG GLY ASN VAL ALA VAL
 260 265 270

FIG. 1A

THR VAL SER GLY HIS THR CYS GLN HIS TRP SER ALA GLN THR PRO
275 280 285

HIS THR HIS ASN ARG THR PRO GLU ASN PHE PRO CYS LYS ASN LEU
290 295 300

ASP GLU ASN TYR CYS ARG ASN PRO ASP GLY LYS ARG ALA PRO TRP
305 310 315

CYS HIS THR THR ASN SER GLN VAL ARG TRP GLU TYR CYS LYS ILE
320 325 330

PRO SER CYS ASP SER SER PRO VAL SER THR GLU GLN LEU ALA PRO
335 340 345

THR ALA PRO PRO GLU LEU THR PRO VAL VAL GLN ASP CYS TYR HIS
350 355 360

GLY ASP GLY GLN SER TYR ARG GLY THR SER SER THR THR THR THR
365 370 375

GLY LYS LYS CYS GLN SER TRP SER SER MET THR PRO HIS ARG HIS
380 385 390

GLN LYS THR PRO GLU ASN TYR PRO ASN ALA GLY LEU THR MET ASN
395 400 405

TYR CYS ARG ASN PRO ASP ALA ASP LYS GLY PRO TRP CYS PHE THR
410 415 420

THR ASP PRO SER VAL ARG TRP GLU TYR CYS ASN LEU LYS LYS CYS
425 430 435

SER GLY THR GLU ALA SER VAL VAL ALA PRO PRO PRO VAL VAL LEU
440 445 450

LEU PRO ASP VAL GLU THR PRO SER GLU GLU ASP CYS MET PHE GLY
455 460 465

ASN GLY LYS GLY TYR ARG GLY LYS ARG ALA THR THR VAL THR GLY
470 475 480

THR PRO CYS GLN ASP TRP ALA ALA GLN GLU PRO HIS ARG HIS SER
485 490 495

ILE PHE THR PRO GLU THR ASN PRO ARG ALA GLY LEU GLU LYS ASN
500 505 510

TYR CYS ARG ASN PRO ASP GLY ASP VAL GLY GLY PRO TRP CYS TYR
515 520 525

THR THR ASN PRO ARG LYS LEU TYR ASP TYR CYS ASP VAL PRO GLN
530 535 540

FIG.1B

CYS ALA ALA PRO SER PHE ASP CYS GLY LYS PRO GLN VAL GLU PRO
545 550 555
LYS LYS CYS PRO GLY ARG VAL VAL GLY GLY CYS VAL ALA HIS PRO
560 565 570
HIS SER TRP PRO TRP GLN VAL SER LEU ARG THR ARG PHE GLY MET
575 580 585
HIS PHE CYS GLY GLY THR LEU ILE SER PRO GLU TRP VAL LEU THR
590 595 600
ALA ALA HIS CYS LEU GLU LYS SER PRO ARG PRO SER SER TYR LYS
605 610 615
VAL ILE LEU GLY ALA HIS GLN GLU VAL ASN LEU GLU PRO HIS VAL
620 625 630
GLN GLU ILE GLU VAL SER ARG LEU PHE LEU GLU PRO THR ARG LYS
635 640 645
ASP ILE ALA LEU LEU LYS LEU SER SER PRO ALA VAL ILE THR ASP
650 655 660
LYS VAL ILE PRO ALA CYS LEU PRO SER PRO ASN TYR VAL VAL ALA
665 670 675
ASP ARG THR GLU CYS PHE ILE THR GLY TRP GLY GLU THR GLN GLY
680 685 690
THR PHE GLY ALA GLY LEU LEU LYS GLU ALA GLN LEU PRO VAL ILE
695 700 705
GLU ASN LYS VAL CYS ASN ARG TYR GLU PHE LEU ASN GLY ARG VAL
710 715 720
GLN SER THR GLU LEU CYS ALA GLY HIS LEU ALA GLY GLY THR ASP
725 730 735
SER CYS GLN GLY ASP SER GLY GLY PRO LEU VAL CYS PHE GLU LYS
740 745 750
ASP LYS TYR ILE LEU GLN GLY VAL THR SER TRP GLY LEU GLY CYS
755 760 765
ALA ARG PRO ASN LYS PRO GLY VAL TYR VAL ARG VAL SER ARG PHE
770 775 780
VAL THR TRP ILE GLU GLY VAL MET ARG ASN ASN
785 790

(SEQ ID NO:1)

FIG.1C

	1	5	10
Human (SEQ ID NO:2)	VAL ALA PRO PRO PRO VAL VAL LEU LEU PRO		
Mouse (SEQ ID NO:8)	--- GLU LEU --- THR --- SER GLN GLU ---		
Monkey (SEQ ID NO:9)	ALA --- --- --- --- ALA GLN --- ---		
Bovine (SEQ ID NO:10)	PRO --- ALA --- 000 000 000 GLN ALA ---		
Porcine (SEQ ID NO:11)	THR ASN PHE --- ALA ILE ALA GLN VAL ---		
	15	20	
Human	ASP VAL GLU THR PRO SER GLU GLU ASP CYS MET PHE GLY ASN		
Mouse	SER GLY PRO SER ASP --- --- THR --- --- TYR --- ---		
Monkey	--- ALA --- --- --- --- --- --- --- --- --- ---		
Bovine	GLY --- --- ASN --- PRO --- ALA --- --- ILE --- THR		
Porcine	SER --- --- ASP LEU --- --- 000 --- --- --- --- ---		
	25	30	35
Human	GLY LYS GLY TYR ARG GLY LYS ARG ALA THR THR VAL THR GLY		
Mouse	--- --- ASP --- --- --- THR --- VAL --- ALA ALA ---		
Monkey	--- --- --- --- --- LYS --- --- --- --- --- ---		
Bovine	--- --- SER --- --- --- LYS --- --- --- ALA ---		
Porcine	--- --- ARG --- --- --- --- --- --- ALA ---		
	40	45	50
Human	THR PRO CYS GLN ASP TRP ALA ALA GLN GLU PRO HIS ARG HIS		
Mouse	--- --- --- GLY --- --- --- --- --- --- --- ---		
Monkey	--- --- --- GLU --- --- --- --- --- SER ---		
Bovine	VAL --- --- GLU --- --- --- --- HIS ---		
Porcine	VAL --- --- GLU --- --- --- --- --- ---		
	55	60	65
Human	SER ILE PHE THR PRO GLU THR ASN PRO ARG ALA GLY LEU GLU		
Mouse	--- --- --- --- GLN --- --- --- --- --- --- ---		
Monkey	ARG --- --- --- --- --- --- --- --- ---		
Bovine	--- --- --- --- --- --- GLN SER --- ---		
Porcine	--- --- --- --- --- --- --- --- ---		
	70	75	80
Human	LYS ASN TYR CYS ARG ASN PRO ASP GLY ASP VAL GLY GLY PRO		
Mouse	--- --- --- --- --- --- --- --- ASN --- ---		
Monkey	--- --- --- --- --- --- --- --- --- --- ---		
Bovine	ARG --- --- --- --- --- --- ASN --- ---		
Porcine	--- --- --- --- --- --- --- ASP ASN --- ---		

FIG.2A

		85		90										
Human	TRP	CYS	TYR	THR	THR	ASN	PRO	ARG	LYS	LEU	TYR	ASP	TYR	CYS
Mouse	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Monkey	---	---	---	---	---	---	---	---	---	---	---	PHE	---	---
Bovine	---	---	---	---	MET	---	---	---	---	---	PHE	---	---	---
Porcine	---	---	---	---	---	---	---	---	GLN	---	PHE	---	---	---
		95		100		101								
Human	ASP	VAL	PRO	GLN	CYS	ALA	ooo	ALA						
Mouse	---	ILE	---	LEU	---	SER	---	---						
Monkey	---	---	---	---	---	---	ooo	---						
Bovine	---	---	---	---	---	---	GLU	ooo	ooo					
Porcine	---	---	---	---	---	---	VAL	ooo	THR					

FIG.2B

1 CATCCTGGGA TTGGGACCCA CTTCTGGGC ACTGCTGGCC AGTCCAAAAA
51 TGGAACATAA GGAAGTGGTT CTTCTACTTC TTTTATTCT GAAATCAGGT
101 CAAGGAGAGC CTCTGGATGA CTATGTGAAT ACCCAGGGGG CTTCACTGTT
151 CAGTGTCACT AAGAACAGC TGGGAGCAGG AAGTATAGAA GAATGTGCAG
201 CAAAATGTGA GGAGGACGAA GAATTCACCT GCAGGGCATT CCAATATCAC
251 AGTAAAGAGC AACAAATGTGT GATAATGGCT GAAAACAGGA AGTCCTCCAT
301 AATCATTAGG ATGAGAGATG TAGTTTATT TGAAAAGAAA GTGTATCTCT
351 CAGAGTGCAA GACTGGGAAT GGAAAGAACT ACAGAGGGAC GATGTCCAAA
401 ACAAAAAATG GCATCACCTG TCAAAAATGG AGTTCCACTT CTCCCCACAG
451 ACCTAGATTC TCACCTGCTA CACACCCCTC AGAGGGACTG GAGGAGAACT
501 ACTGCAGGAA TCCAGACAAC GATCCGCAGG GGCCCTGGTG CTATACTACT
551 GATCCAGAAA AGAGATATGA CTACTGCGAC ATTCTTGAGT GTGAAGAGGA
601 ATGTATGCAT TGCAGTGGAG AAAACTATGA CGGCAAAATT TCCAAGACCA
651 TGTCTGGACT GGAATGCCAG GCCTGGGACT CTCAGAGCCC ACACGCTCAT
701 GGATACATTC CTTCCAAATT TCCAAACAAG AACCTGAAGA AGAATTACTG
751 TCGTAACCCC GATAGGGAGC TGCGGCCTTG GTGTTTCACC ACCGACCCCA
801 ACAAGCGCTG GGAACTTGT GACATCCCCC GCTGCACAAC ACCTCCACCA
851 TCTTCTGGTC CCACCTACCA GTGTCTGAAG GGAACAGGTG AAAACTATCG
901 CGGGAATGTG GCTGTTACCG TGTCCGGCA CACCTGTCAG CACTGGAGTG
951 CACAGACCCCA TCACACACAT AACAGGACAC CAGAAAACCTT CCCCTGCAA
1001 AATTGGATG AAAACTACTG CCGCAATCCT GACGGAAAAA GGGCCCCATG
1051 GTGCCATACA ACCAACAGCC AAGTGCAGGTG GGAGTACTGT AAGATACCGT
1101 CCTGTGACTC CTCCCCAGTA TCCACGGAAC ATTGGCTCC CACAGCACCA
1151 CCTGAGCTAA CCCCTGTGGT CCAGGACTGC TACCATGGTG ATGGACAGAG
1201 CTACCGAGGC ACATCCTCCA CCACCAACAGC AGGAAAGAAG TGTCAGTCTT
1251 GGTCACTAT GACACCACAC CGGCACCAGA AGACCCAGA AACTACCCA

FIG.3A

1301 AATGCTGGCC TGACAATGAA CTACTGCAGG AATCCAGATG CCGATAAAGG
1351 CCCCTGGTGT TTTACCACAG ACCCCAGCGT CAGGTGGGAG TACTGCAACC
1401 TGAAAAAAATG CTCAGGAACA GAAGCGAGTG TTGTAGCACC TCCGCCTGTT
1451 GTCCTGCTTC CAGATGTAGA GACTCCTTCC GAAGAAGACT GTATGTTGG
1501 GAATGGGAAA GGATACCGAG GCAAGAGGGC GACCACTGTT ACTGGGACGC
1551 CATGCCAGGA CTGGGCTGCC CAGGAGCCCC ATAGACACAG CATTTCACT
1601 CCAGAGACAA ATCCACGGGC GGGTCTGGAA AAAAATTACT GCCGTAACCC
1651 TGATGGTGAT GTAGGTGGTC CCTGGTGCTA CACGACAAAT CCAAGAAAAC
1701 TTTACGACTA CTGTGATGTC CCTCAGTGTG CGGCCCTTC ATTTGATTGT
1751 GGGAAAGCCTC AAGTGGAGCC GAAGAAATGT CCTGGAAGGG TTGTAGGGGG
1801 GTGTGTGGCC CACCCACATT CCTGGCCCTG GCAAGTCAGT CTTAGAACAA
1851 GGTTTGGAAT GCACTTCTGT GGAGGCACCT TGATATCCCC AGAGTGGGTG
1901 TTGACTGCTG CCCACTGCTT GGAGAAGTCC CCAAGGCCTT CATCCTACAA
1951 GGTCACTCTG GGTGCACACC AAGAAGTGAA TCTCGAACCG CATGTTCAAG
2001 AAATAGAAGT GTCTAGGCTG TTCTTGAGC CCACACGAAA AGATATTGCC
2051 TTGCTAAAGC TAAGCAGTCC TGCGTCATC ACTGACAAAG TAATCCCAGC
2101 TTGTCTGCCA TCCCCAAATT ATGTGGTCGC TGACCGGACC GAATGTTCG
2151 TCACTGGCTG GGGAGAAACC CAAGGTACTT TTGGAGCTGG CCTTCTCAAG
2201 GAAGCCCAGC TCCCTGTGAT TGAGAATAAA GTGTGCAATC GCTATGAGTT
2251 TCTGAATGGA AGAGTCCAAT CCACCGAACT CTGTGCTGGG CATTGGCCG
2301 GAGGCACTGA CAGTTGCCAG GGTGACAGTG GAGGTCTCT GGTTTGCTTC
2351 GAGAAGGACA AATACATTTT ACAAGGGAGTC ACTTCTTGGG GTCTGGCTG
2401 TGCACGCCCTC AATAAGCCTG GTGTCTATGT TCGTGTTCA AGGTTTGTAA
2451 CTTGGATTGA GGGAGTGATG AGAAATAATT AATTGGACGG GAGACAG

(SEQ ID NO:12)

FIG.3B

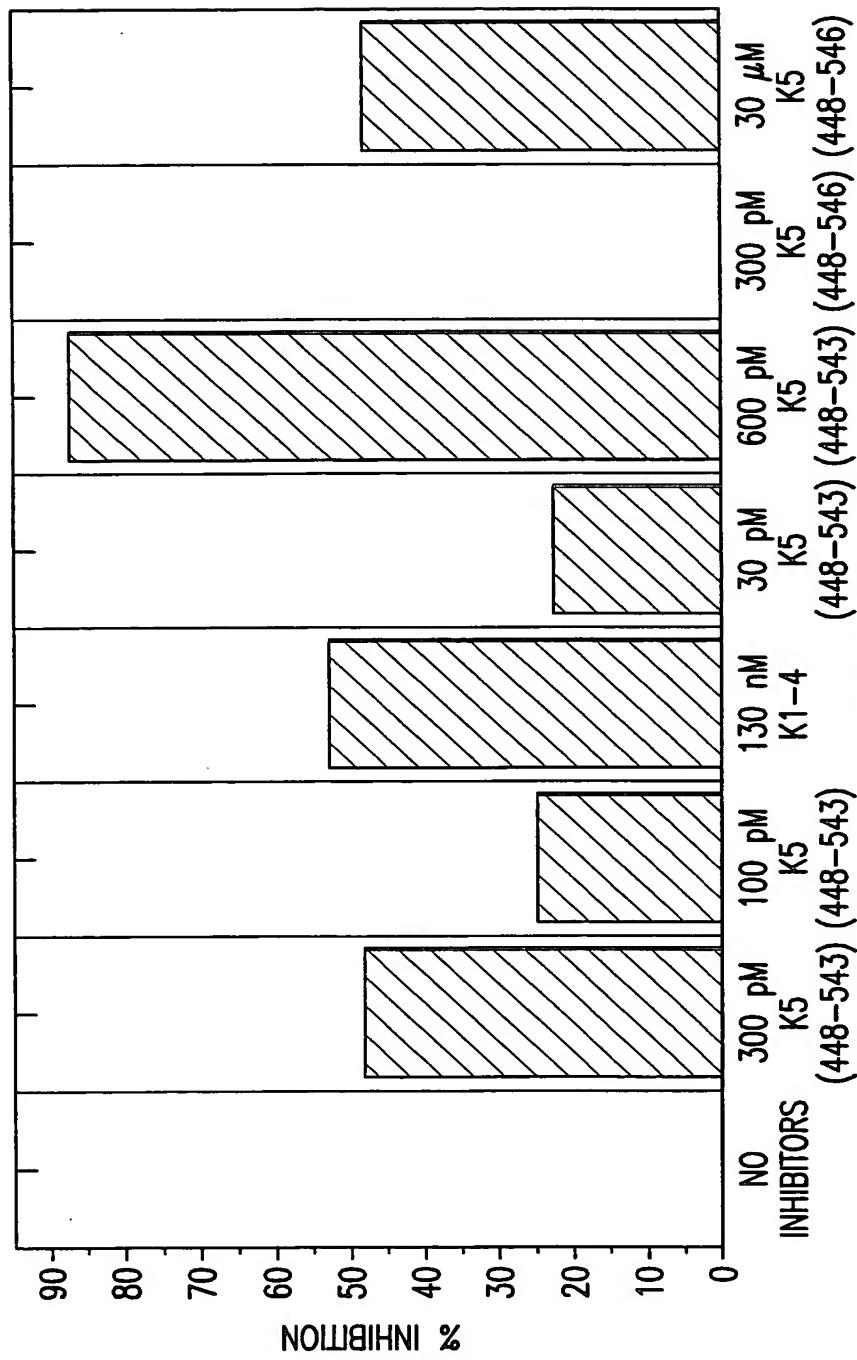
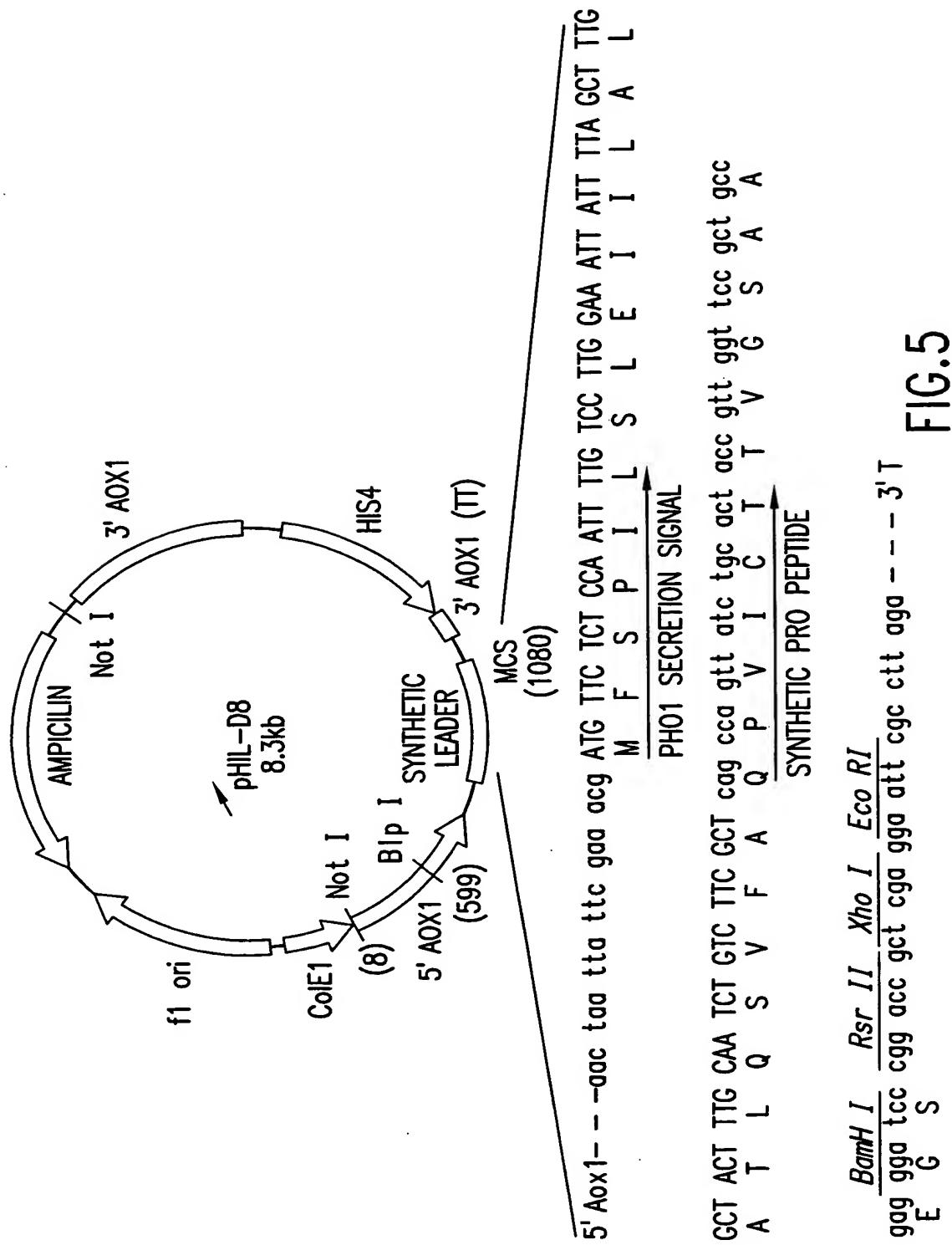


FIG. 4



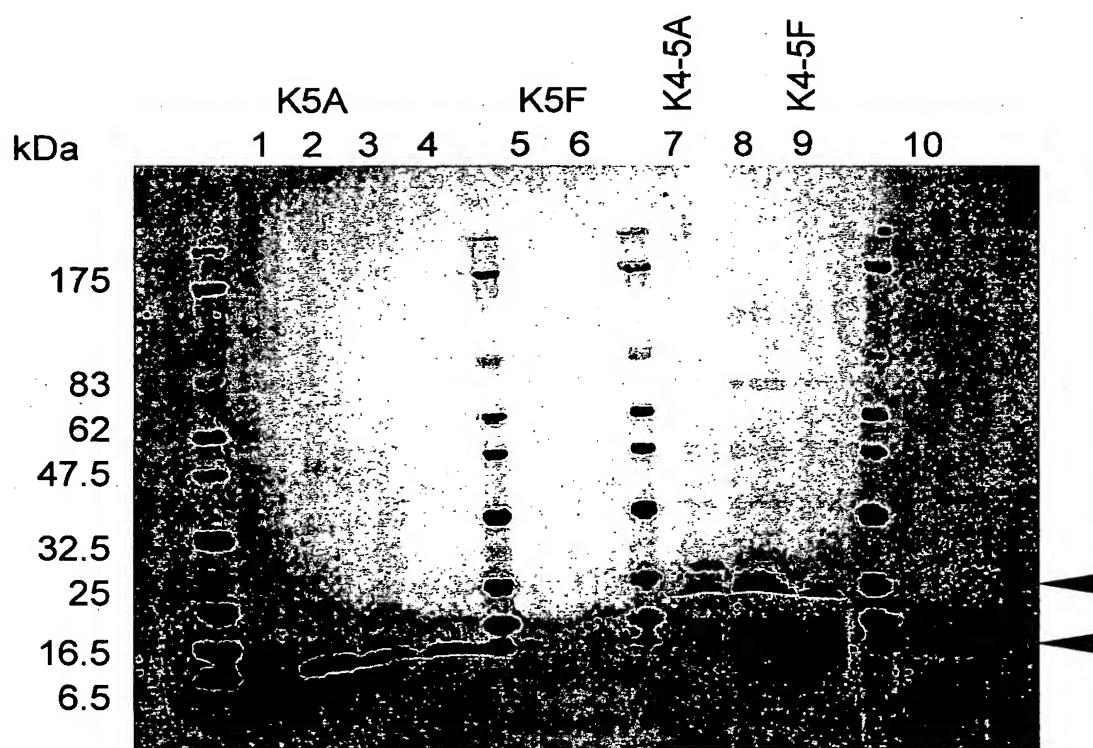


FIG.6

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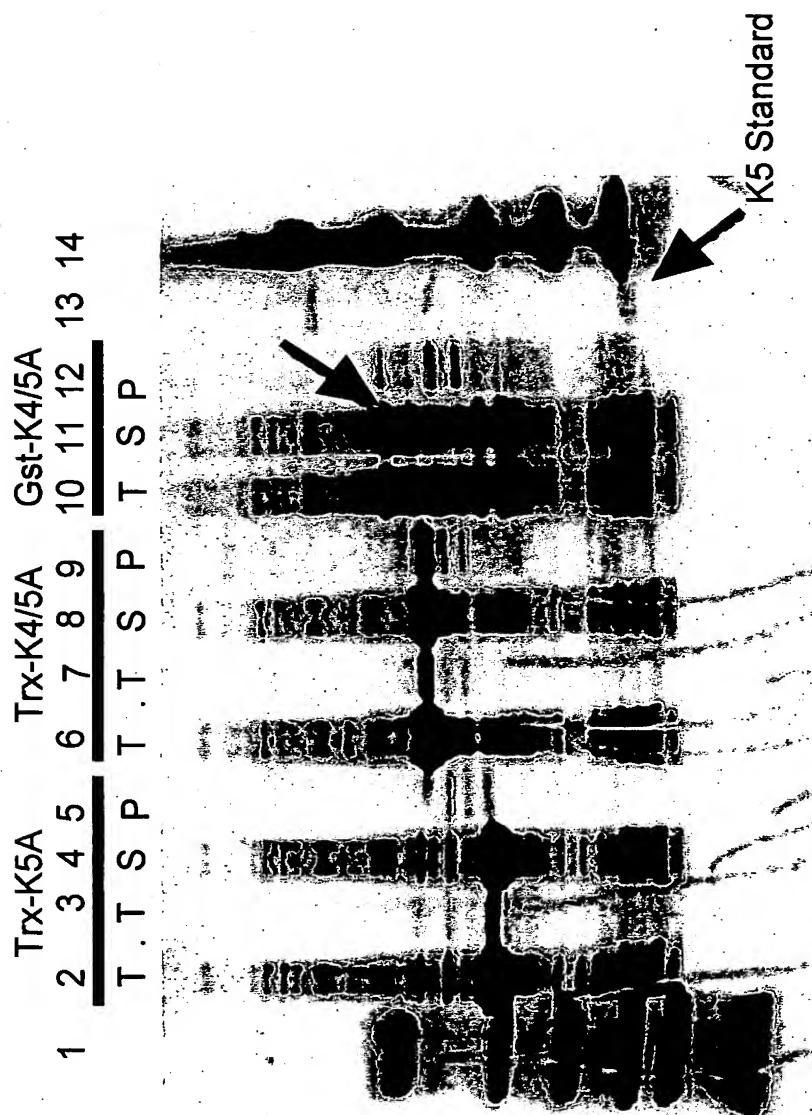


FIG. 7

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